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ABSTRACT

The reliability, validity, and dimensionality of the revised UCLA Loneliness Scale (ULS) were studied with a group of 199 California college students. Other personality tests were administered to measure social anxiety, alienation, health locus of control, drinking-related locus of control, life satisfaction, and personal values. Sociodemographic measures included grade in college, sex, and age. Health-related behaviors assessed included meal regularity, exercise, hours of sleep, drug use, smoking, and alcohol use and negative consequences. The reliability was .90 for the 20-item ULS and .63 for the 4-item short form. Factor analysis indicated five dimensions which are lower-order dimensions of a higher-order factor of loneliness: most importantly, social isolation; followed by unavailability of empathic confidants, unavailability of support persons, lack of social integration, and lack of meaningful social relationships. Loneliness was significantly correlated with alienation; social anxiety; satisfaction with friends, sex life, family or home life, and self; and drinking-related locus of control. Health-related behavior was not significantly correlated. In this sample, males were significantly more lonely than females. Multiple regression anaylsis indicated that the personality variables accounted for sixty percent of the ULS variance. The ULS and the short form are included. (GDC)

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Reliability, Validity, and Dimensionality of the UCLA Loneliness Scale

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Loneliness refers to a deficiency of social contact (companionship and intimacy) compared to that which is desired. Social support, a closely related concept, refers to the quantity and quality of social contacts and resources available to an individual (Sherbourne, Hays, & Stewart, in preparation). Loneliness, by definition, is inherently subjective (Rook, 1984), but social support can be measured either objectively (by an outside observer) or subjectively (from the phenomenological perspective of the actor) (DiMatteo & Hays, 1981). Furthermore, loneliness is aversive, but absence of social support is not necessarily aversive (Peplau & Perlman, 1979).

Previous research has linked loneliness with a variety of negative personality characteristics such as social anxiety, low self-esteem, and depression (Russell, 1982; Russell, Peplau, & Cutrona, 1980). But, the relationship between loneliness and behavior has received insufficient attention. An important research issue is the correspondence between loneliness and health-related behavior. Rook (1984, p. 251) notes that:

> Less attention has been paid to the possibility of deviance and behavioral problems as consequences of loneliness, although tendencies toward delinquency and antisocial behavior have been found among lonely adolescents .... there are clues in the research literature that loneliness may lead to alcoholism, drug abuse, and other behavioral disorders ... although causal pathways linking loneliness to deviance have not been specified. For example, substance abuse might represent an attempt to reduce the pain associated with loneliness or, alternatively, a means of gaining access to others or managing social anxiety. It is hoped that theoretical analyses linking

> loneliness to deviance and behavioral disorders will be undertaken. Such analyses would call attention to the costs of loneliness not only to the lonely individual but also to society.

Peplau and Perlman (1979) have also suggested that individuals may attempt cope with feelings of loneliness by engaging in health-compromising behaviors such as drug use.

Among the most widely used loneliness measures is the revised UCLA Loneliness Scale (ULS) developed by Russell et al. (1980). We included the ULS in a study of health-related behavior among college students. This paper presents our assessment of the reliability, dimensionality, and validity of the ULS in this college sample. First, we report the psychometric properties and factor structure of the instrument. Then, we examine the association of the ULS with other personality measures, sociodemographic variables, and health-related behavior.

METHOD

Subjects

Respondents were 199 college students (38.2% males, 61.8% females) at a southern California university. The mean age of the sample was 21.0 (range 17-48, SD=4.5). Slightly more than half of the sample was white (54.6%), followed by black (15.7%), Chicano (a) (14.7%), Chinese (3.5%), Japanese (3.0%), other Asian (3.5%), and other ethnic statuses (5.0%). Respondents were recruited from campus and filled out the survey during either the spring or summer term of 1981.

Measures

Personality. The revised UCLA Loneliness Scale (ULS) is given in Table 1. Other personality measures included in the study were social anxiety (Fenigstein, Scheier, & Buss, 1975), alienation (Hays, 1980), health locus of control (Wallston, Wallston, Kaplan, & Maides, 1976), drinking-related locus of control (Donovan &

O'Leary, 1978), life satisfaction (Jessor & Jessor, 1977), and personal values (Jessor and Jessor, 1977).

Sociodemographics. The sociodemographics variables measured in the study included grade in college, gender, and age.

Health-Related Behaviors. Six health-related behaviors were assessed: meal regularity, exercise, hours of sleep, drug use, smoking, and alcohol use. The measures of meal regularity, exercise, hours of sleep, drug use, and smoking are described elsewhere (Hays, Stacy, & DiMatteo, 1984). Alcohol intake was assessed by the frequency and quantity of beer, wine, and hard liquor usage as well as negative consequences of use. A quantity-frequency index (adapted from Jessor, Graves, Hanson, & Jessor, 1968) was computed by dividing the number of days respondents drank beer, wine, and hard liquor in the last month by 30 and multiplying these three values by the corresponding amount of beer, wine, and hard liquor they usually consumed at one sitting. The resulting products were multiplied by a constant representing the number of ounces of absolute alcohol per drink for each of the three types of alcohol (beer=.480; wine=.600; hard liquor=.675) and summed to form an index of absolute ounces of alcohol consumed per day on the average. This index is a composite that summarizes information on frequency and quantity of alcohol intake, and it has been found to display convergent and discriminant validity among college students (Stacy, Widaman, Hays, & DiMatteo, in press). In the survey, respondents were asked how often (Never, One, Two Or Three, Four Or More) in the past six months they had experienced each of nine negative consequences of alcohol use: (1) accidents at work, home, or school; (2) concern or criticism from family members; (3) financial difficulties; (4) concern or criticism from friends; (5) driven when had a good deal to drink; (6) missed school or work because of drinking; (7) been in trouble with the police or been arrested because of drinking; (8) people at school or work mention that drinking is leading to problems in school or on the job; and (9) perceived decrease in performance at school or work due to drinking.

Responses to these nine items were summed to form the measure of negative consequences.

Insert Table 1 About Here

RESULTS AND DISCUSSION

Table 2 provides normative statistics for the ULS reported by Russell et al. (1980) and corresponding statistics from the present study. These results are similar. Alpha reliability was 0.90 for the 20-item ULS and 0.63 for the 4-item short form ULS (n=180, listwise deletion of cases) in this study compared to 0.94 and 0.75, respectively, in the Russell et al. (1980) study.

Insert Table 2 About Here

Factor Analysis

Although internal consistency results from previous research (see Russell, 1982) suggest unidimensionality in the ULS, some studies have found the ULS to be multidimensional (Austin, 1983; Hojat, 1982a; Zakahi & Duran, 1982). Factor analysis was conducted in order to explore for ULS subscales. The 20 items of the scale were intercorrelated using listwise deletion of cases (n=180). Cattell's (1966) scree test and Montanelli and Humphreys' (1976) parallel analysis (see Hays, in press) were used to determine the number of factors to rotate. Both criteria indicated that five factors were needed for these data.

Common factor analysis with highest r's as prior commonality estimates was used to obtain the unrotated matrix. The first unrotated factor explained 67.44% of the common variance and 6.7% of the total variance. An oblique Promax rotation using highest r's as prior commonality estimates was then performed. Factor intercorrelations for

the oblique solution ranged from .30 to .50. The unrotated and rotated solutions are shown in Table 3.

Insert Table 3 About Here

Factor 1, "Social Isolation," is the most general factor because 9 of the 20 loneliness items have notable loadings on it. Interpretations for the other factors are as follows: Factor 2 represents the unavailability of empathic confidants, factor 3 the unavailability of support persons, factor 4 a lack of social integration, and factor 5 a lack of meaningful interpersonal relationships.

Of these dimensions, the first dimension best represents the essence of loneliness as defined by the difference between desired and actual companionship and intimacy. Indeed, a subscale formed by summing together the nine items loading on this factor had excellent psychometric properties (alpha=0.83, RII=0.36) and captured the variance in the 20-item ULS (see subsequent results). The third factor contains items that may indicate the availability of social support rather than feelings of loneliness per se. That is, a respondent's agreement that there is no one to turn to and no one to talk to may represent a perceived absence of social support.

The results of the factor analysis indicate that although the ULS is internally consistent, more than one factor is needed to account for the covariance among the scale's items. Five factors were needed in the present study and in a previous study (Hojat, 1982a). We interpret the five factors in this study as lower-order dimensions of a higher-order factor of loneliness. In other words, loneliness is unidimensional at a higher-order of analysis. The relationship between loneliness and its lower-order factors is depicted in Figure 1. The structure diagrammed in the figure should be taken as tentative because it was empirically derived and is based on the results from a single sample.

Insert Figure 1 About Here

Loneliness, Personality, Sociodemographics, And Health-Related Behavior

Pearson product-moment correlations were computed between loneliness and the other measures in the study using the ULS and the Social Isolation subscale (see Table 4). As seen in the table, results for both loneliness indicators are consistent. Consonant with theoretical expectations, loneliness was significantly correlated with alientation, social anxiety, satisfaction with friends, satisfaction with sex life, satisfaction with family or home life, satisfaction with self, and drinking-related locus of control. Loneliness was not significantly correlated with age, grade in college, satisfaction with physical condition, satisfaction with teachers in school, health locus of control, personal values, satisfaction with school performance, and health-related behavior. Similar to the results reported by Russell et al. (1980) for their first study, males were significantly more lonely than females in this study.*

Insert Table 4 About Here

To determine the combined contribution of the predictors to explaining the variability in loneliness, multiple regression was conducted. As shown in Table 5, the combined predictor set accounted for 63% of the variance in ULS and 65% of the variance in Social Isolation. The personality variables accounted for all of this combined predictor capacity, explaining 60% and 62% of the ULS and Social Isolation variance, respectively. The amount of variance in

*But, according to research reviewed by Peplau and Perlman (1979), "more women than men report feeling lonely" (p. 104).

loneliness explained by the personality variables in this study is comparable to that reported by Hojat (1982b).

Insert Table 5 About Here

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Table 1

Revised UCLA Loneliness Scale

(-)	1.	I feel in tune with the people around me. (NEVER)
(+)	*2.	I lack companionship. (OFTEN)
(+)	*3.	There is no one I can turn to. (OFTEN)
(-)	4.	I do not feel alone. (NEVER)
(-)	5.	I feel part of a group of friends. (NEVER)
(-)	6.	I have a lot in common with the people around me. (NEVER)
(+)	7.	I am no longer close to anyone. (OFTEN)
(+)	8.	My interests and ideas are not shared by those around me. (OFTEN)
(-)	*9.	I am an outgoing person. (NEVER)
(-)	*10.	There are people I feel close to. (NEVER)
(+)	*11.	I feel left out. (OFTEN)
(+)	12.	My social relationships are superficial. (OFTEN)
(+)	13.	No one really knows me well. (OFTEN)
(+)	*14.	I feel isolated from others. (OFTEN)
(-)	*15.	I can find companionship when I want it. (NEVER)
(-)	16.	There are people who really understand me. (NEVER)
(+)	*17.	I am unhappy being so withdrawn. (OFTEN)
(+)	*18.	People are around me but not with me. (OFTEN)
(-)	19.	There are people I can talk to. (NEVER)
(-)	20.	There are people I can turn to. (NEVER)

Note. Directions preceding items state: "Indicate how often you feel the way described in each of the following statements. Circle one number for each." Response options are NEVER, RARELY, SOMETIMES, OFTEN. The word in parentheses following each item represents an extreme response indicative of loneliness. Underlined items comprise the ULS mini scale.

*

Denotes items loading on Social Isolation factor.

Table 2

Descriptive Statistics For ULS

Statistic	UCLA Males	UCLA Females	SC Males	SC Females
n	102	128	70	110
M	37.06	36.06	41.21	36.42
SD	10.91	10.11	9.79	8.78
Mdn	35.38	34.17	39.75	34.83
Mode	30.00	29.00	33.00	31.00
Range	20-68	20-66	22-64	20-70

Note. UCLA denotes the sample of UCLA students studied by Russell et al. (1980). SC represents the southern California sample analyzed in this paper.

Table 3

Primary Factor Pattern Loadings For The Unrotated And Rotated Five-Factor Solutions Using Maximum Correlations As Prior Commonality Estimates

	Unrotated					Rotated				
Item	I	II	III	IV	V	I	II	III	IV	V
17	56	30		-32		73				
11	68	37				70				
2	60					56				
14	72					54	46			
18	73					43	31			
15*	-55					-35				
10*	-47	39				34#	-57			
3	70					31		31		
9*	-41					-28				
16*	-61				32		-58			
13	53						46			
19*	-61	44		34				-81		
20*	-69	51						-73		
7	70						39	36		
5*	-52		51						-65	
4*			38						-52	
1*	-52		30						-43	
8	46				32					61
12	49			36			41			39
6*	-55		38						-36	-49

Note. Analyses were based on 180 cases (listwise deletion). Oblique Promax rotation was employed (SAS 1982 Edition). Loadings greater than .30 in magnitude are included in the table. If none of the loadings for a measure exceeded .30 (in magnitude), its highest loading is shown in the table. Items followed by an asterisk were worded so that responses of NEVER indicate loneliness. Items not followed by an asterisk were worded so that responses of OFTEN indicate loneliness. Factor interpretations are as follows: I-Social Isolation, II-Unavailability of Emphathic Confidants, III-Unavailability of Support Persons, IV-Lack of Social Integration, V-Loack of Meaningful Social Relationships.

Table 4

Correlations Between Loneliness And Personality, Sociodemographics, and Health-Related Behaviors

	Loneliness		K	Alpha
PERSONALITY	ULS	SOC ISO.		
Alienation	.65*	(0.63*)	10	.81
Social anxiety	.49*	(0.50*)	6	.71
Satisfaction with friends	-.46*	(-.40*)	1	---
Satisfaction with sex life	-.37*	(-.37*)	1	---
Satisfaction with family or home life	-.32*	(-.29*)	1	---
Satisfaction with self	-.31*	(-.34*)	1	---
Drinking locus of control	-.20*	(-.15*)	25	.93
Satisfaction with physical condition	-.11	(-.17*)	1	---
Satisfaction with teachers in school	.11	(0.19*)	1	---
Health locus of control	-.09	(-.07)	11	.69
Value on altrusm	-.07, -.07	(-.08, -.09)	1,1	---
Value on affection	0.12, .02	(0.18*,0.08)	1,1	---
Value on independence	0.02, -.11	(-.06, -.12)	1,1	---
Value on dependence	0.07, -.02	(0.11, 0.03)	1,1	---
Satisfaction with school performance	-.02	(0.02)	1	---
Value on recognition .00, .00, .01		(-.04, -.02, 0.06)	1,1,1	---
SOCIODEMOGRAPHICS				
Gender	.23*	(0.19*)	1	---
Age	-.02	(-.04)	1	---
Grade in college	.01	(0.04)	1	---
HEALTH-RELATED BEHAVIORS				
Exercise	-.13	(-.12)	6	.75
Meal regularity	-.07	(-.07)	2	.66
Quantity-frequency of alcohol use	-.07	(-.08)	3	.44
Negative consequences of alcohol use	.01	(-.04)	9	% .56
Hard drug use	-.05	(-.08)	10	.84
Smoking	-.03	(-.02)	2	.95
Hours of sleep	.01	(0.05)	1	---

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* p<=.05

% Estimated from a high school sample.

Table 5

Multiple Regression Analyses Predicting Loneliness

Predictor Set	R	R^2	$\hat{R}^2$	F	DF's
PERSONALITY					
Total Scale	.78	.60	.55	11.04**	(22, 159)
Social Isolation	.79	.62	.56	11.63**	
Mini Scale	.70	.49	.42	6.86**	
SOCIODEMOGRAPHICS					
Total Scale	.23	.05	.04	3.43*	(3, 178)
Social Isolation	.20	.04	.02	2.52	
Mini Scale	.31	.09	.08	6.19**	
BEHAVIORS					
Total Scale	.17	.03	.00	0.75	(7, 174)
Social Isolation	.18	.03	.00	0.82	
Mini Scale	.14	.02	.00	0.48	
COMBINED PREDICTORS					
Total Scale	.79	.63	.55	7.95**	(32, 149)
Social Isolation	.80	.65	.57	8.54**	
Mini Scale	.73	.53	.43	5.30**	

Note. Mini Scale is 4-item short form of the ULS.

* P<.05

** P<.01

Figure 1

Five Dimensions of Loneliness